Individual Evaluation Form

Proposal Number: 07-CCSP_07-0001

Orgnization Name: LMD/IPSL

Principal Investigator: Emily Chien

Evaluation Summary

Solicitation Title:	Earth Science Document Review
Solicitation Number:	NNH07ZDA001R
Evaluation Status:	Submitted (07/29/2007 @ 04:17:52 EDT by Frank Muller-Karger)
Review:	Climate Change Science Program Doc Review - ENTIRE DOCUMENT [CCSP FULL DOC]
Reviewer:	Frank Muller-Karger (Reviewer)

Overall Grade:

Evaluation Criteria

Question 1 : Please distinguish issues you consider to be of general/major concern(s) from other, less significant point(s).

This review addresses the Synthesis and Assessment Product (SAP) report drafted in response to the CCSP SAP 5.1 Prospectus. General comment: This Synthesis and Assessment Product (SAP) report addresses two tasks in response to the SAP 5.1 Prospectus. One task was to describe a select number of example decision support tools (DST) in areas that were determined by NASA and the Group on Earth Observations to be important. The second task was to catalog other possible DSTs which may use or which could contribute to forecasts and projections of climate and global change. The Prospectus requires that the SAP: * explain the observational capabilities used in the DST; * identify the organizations responsible for DST development, operation, maintenance; * characterize the nature of interaction between users and producers; * discuss sources of uncertainty associated with observations and the DST; * describe relationships between DST and global change information, and whether the DST is useful in climate-related predictions. The Prospectus also states that the synthesis and assessment report should be designed to serve decision makers and stakeholder communities interested in using global change information resources in policy, planning, and other practical uses, and that this should include researchers. I felt that the SAP report is a ways off from addressing several of these requirements, as outlined below. Also, I found the report to be long, especially if the intended audience are groups interested in further developing the DSS tools described as case studies, or to engage NASA in helping advance other existing but less developed DSS. On the other hand, the executive summary is vague and not useful for this purpose either. Additional specific comments are provided in other sections of the review.

Question 2 : Please distinguish issues you consider to be of general/major concern(s) from other, less significant point(s).

P 4 L 55-62: Of great importance is understanding what observations are required to enable and advance decision support systems; in this regard it is critical for people using decision support systems to specify types of observations, and the frequency and quality required in sensing systems to enable science-quality observations for management support. In other words, it is important also to highlight the need for customer input and feedback. P 7 L 129-138 in Exec Summary and throughout the body of the report: While the text provides good general information, the reader is often not given a full sense improvements gained by incorporating the NASA or other Earth observation data. Other than for the renewable resources chapter (Chapter 3), the text and the summary both lack quantitative data on whether the NASA data and models help improve farming, water management, air quality, etc., even in the specific instance of the case studies selected for the report. Other than the Public Health example, the other sections have no useful figures or no figures at all showing data quality, results improvement trends, DST interfaces, money saved, etc. While some of the chapters have some figures, these are not that useful, and several sections have none. The sections on "uncertainty" for each case study are vague and don't convey a sense of improvement other than through a positive language in the report - but this can be read as significant hand-waving. On P 32, the author states that NASA's effort with supporting PECAD has not addressed developing a strategy for climate change - and the same is true for the other case studies; yet this was a requirement in the Prospectus. In my opinion, the report does not really help develop a very deep understanding of the relevance of DSTs to management and also to help understand climate change predictions or climate change impacts. The statements addressing the requirements listed in the Prospectus are vague. Among these, the reasons given to exclude research (for example the requirement for real-time data) are somewhat weak.

Question 3 : Please distinguish issues you consider to be of general/major concern(s) from other, less significant point(s).

Question 4 : Please distinguish issues you consider to be of general/major concern(s) from other, less significant point(s).

There are no really serious sensitive issues treated. There are no assessments of use of alternative approaches.

Question 5 : Please distinguish issues you consider to be of general/major concern(s) from other, less significant point(s).

Perhaps I completely missed it, but in the specific instances of the case study addressing air quality (Chapter 2) and water resource management (Chapter 5), it is hard to understand the role that NASA is playing in developing or improving the DST, or how NASA is helping integrate Earth observations and models into the DST. In Chapter 5, simply mentioning some satellites (page 2197) is not enough to show how space-based Earth Observation data is useful. There seems to be no direct effort at NASA to help guide the air quality or water resource management DSS to address climate change impacts. In the case of air quality, this seems to be happening through initiatives of the EPA or other people working on the air quality models mentioned (some of these projects obtain partial funding from NASA independent of this SAP effort). There seems to be no active participation in this sense by NASA in either case study; the report describes pretty much what appears to be a desired interaction, not an actual interaction - it is not clear to me why these sections are in the report. One of the best written sections, I thought, was Chapter 3 (Decision Support for Assessing Hybrid Renewable Energy Systems). However, this section can also benefit from some key illustrations or figures showing gains obtained through NASA's participation and providing Earth Observing data. Also, the web links such as that provided for KAMM lead to very uninformative web pages that have very little utility (a paragraph of text on a project carried out of somewhere in Denmark - so?).

Question 6 : Please distinguish issues you consider to be of general/major concern(s) from other, less significant point(s).

P6/6: It is unclear from reading the first few pages of the Executive summary and of the actual document body whether this document is intended to represent the multiagency strategy of the CCSP, or whether it is intended to be NASA's contribution to the CSSP. One eventually comes to understand that this is NASA's contribution. It is unfortunate that the view and expectations of other agencies engaged in CCSP were not included. All the examples, and indeed the entire NASA effort, seem to be focused on supporting the development of DST's within the Federal government. In my opinion, this is an enormous limitation of the program. For example, some of the federal agencies at the core of the DST core studies presented are in strong partnership with industry or universities. However, in the cases described, the NASA program seems to ignore this creative resource, and simply engages the agency directly without a venue for improving the tools, developing statistical assessments, etc. I strongly recommend that the program open up and develop linkages to state, tribal, and local governments, as well as a strategy to use the creative engine of academia and research groups, and use the entrepreneurial engine of private industry, rather than centralize all these processes within a few Federal agencies.

Question 7 : Please distinguish issues you consider to be of general/major concern(s) from other, less significant point(s).

The executive summary is rather vague, yet still long. Specifically the executive summary does not go into any depth on whether or how well the requirements of the SAP 5.1 Prospectus were addressed. It is vague and lacks in quantitative assessment of the impacts of uncertainty and climate change.

Question 8 : Please distinguish issues you consider to be of general/major concern(s) from other, less significant point(s).

Appendices/References: format should be consistent for references in each chapter.

Question 9 : Please distinguish issues you consider to be of general/major concern(s) from other, less significant point(s).

Specific comments: The pages in the Index are off. (for example: Intro. Title is on p 21, not 12) P 4 L 54 and elsewhere in the Exec Summary and full document: There seems to be an assumption that the words "Earth science data products" is equivalent to NASA- or other satellite derived products or associated models. The authors perhaps could qualify this so there is no ambiguity- or perhaps the intent is to be all inclusive, including all data not collected by NASA- or other similar federal systems or infrastructure. P 12 L 238 ¿ remove quotes P 16 L 356 ¿ should be "a study" P 30-31: It is good to list limitations identified previously and published by the NRC. However, what other limitations have the authors and NASA found in developing DST's? More importantly, what has NASA done to overcome these weaknesses that have been published prior to writing this report, and which are simply re-stated here? P 81 and onwards in Chapter 4 ¿ minimize the use of the words "as such" to preface an example. L 1914 ¿ remove "the" Figure 1: Is the intent of the authors that someone understand the process of the SAP by looking at this Figure? If so, this is probably going to fail. This figure is too complicated and does not outline a process but a whole bunch of possible connections between various entities and data sources. Figure 1-4: None of the figures helps understand the value and accuracy gained by using any and/or all of the data or models used.